

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

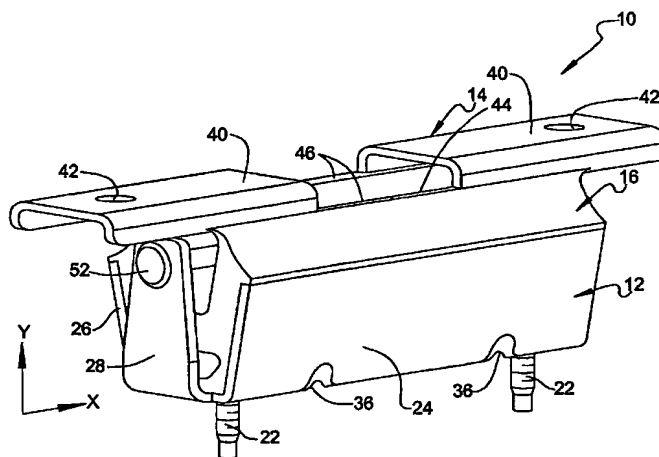
PCT

(10) International Publication Number
WO 2005/015050 A2

- (51) International Patent Classification⁷: **F16F** Trail, New Hudson, MI 48165 (US). **LE, Phung** [VN/US]; 37717 Baylor Drive, Sterling Heights, MI 48310 (US).
- (21) International Application Number: PCT/US2004/025505 (74) Agent: **WANGEROW, Ronald**; Freudenberg-NOK General Partnership, Intellectual Property Department, 47690 East Anchor Court, Plymouth, MI 48170-2455 (US).
- (22) International Filing Date: 6 August 2004 (06.08.2004)
- (25) Filing Language: English (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (26) Publication Language: English
- (30) Priority Data: 60/492,918 6 August 2003 (06.08.2003) US (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
- (71) Applicant (for all designated States except US): **FREUDENBERG-NOK GENERAL PARTNER-SHIP** [US/US]; 47690 East Anchor Court, Plymouth, MI 48170-2455 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WIRGES, Todd** [US/US]; 1511 Natalie Lane, Apt. 102, Ann Arbor, MI 48105 (US). **PRICE, Donald** [US/US]; 58535 Pontiac

[Continued on next page]

(54) Title: POWERTRAIN MOUNT



(57) Abstract: A vibration isolation mount (10) is provided including a bracket member (12) including a base portion (18) having a pair of side wing portions (24, 26) extending from a pair of bends in the base portion (18). At least one pair of end wing portions (28, 30) extend from opposite ends of the bracket member (12). A core element (14) including a body portion (46) is disposed between the pair of side wing portions (24, 26). An elastomeric spring member (16) is disposed between the body portion of the core element (14) and the pair of side wing portions of the bracket member (12). The at least one pair of end wing portions (28, 30) are bent towards the elastomeric spring member (16) so as to oppose opposite ends of the spring member so as to provide a lateral travel restrictor for the elastomeric spring member (16) without the necessity of additional components. According to yet another aspect of the present invention, a travel restrictor pin (52) is provided extending between the pair of end wing portions (28, 30) and through an opening in the body portion (46) of the core element (14). The travel restrictor pin (52) provides additional longitudinal travel restriction in order to limit the amount of stresses applied to the elastomeric spring member (16).

WO 2005/015050 A2



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ,

BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

- without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/015050 A3

(51) International Patent Classification⁷: **F16M 13/00**

Trail, New Hudson, MI 48165 (US). **LE, Phung** [VN/US];
37717 Baylor Drive, Sterling Heights, MI 48310 (US).

(21) International Application Number:
PCT/US2004/025505

(74) Agent: **WANGEROW, Ronald**; Freudenberg-NOK General Partnership, Intellectual Property Department, 47690 East Anchor Court, Plymouth, MI 48170-2455 (US).

(22) International Filing Date: 6 August 2004 (06.08.2004)

(25) Filing Language: English

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
60/492,918 6 August 2003 (06.08.2003) US

(71) Applicant (*for all designated States except US*):
**FREUDENBERG-NOK GENERAL PARTNER-
SHIP** [US/US]; 47690 East Anchor Court, Plymouth, MI
48170-2455 (US).

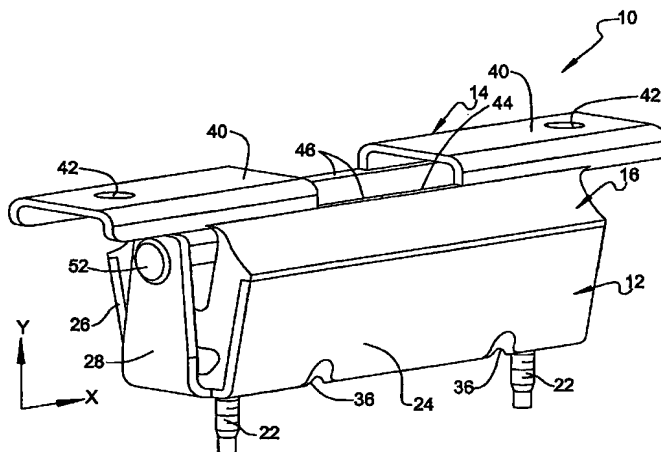
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **WIRGES, Todd**
[US/US]; 1511 Natalie Lane, Apt. 102, Ann Arbor, MI
48105 (US). **PRICE, Donald** [US/US]; 58535 Pontiac

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: POWERTRAIN MOUNT



(57) Abstract: A vibration isolation mount (10) is provided including a bracket member (12) including a base portion (18) having a pair of side wing portions (24, 26) extending from a pair of bends in the base portion (18). At least one pair of end wing portions (28, 30) extend from opposite ends of the bracket member (12). A core element (14) including a body portion (46) is disposed between the pair of side wing portions (24, 26). An elastomeric spring member (16) is disposed between the body portion of the core element (14) and the pair of side wing portions of the bracket member (12). The at least one pair of end wing portions (28, 30) are bent towards the elastomeric spring member (16) so as to oppose opposite ends of the spring member so as to provide a lateral travel restrictor for the elastomeric spring member (16) without the necessity of additional components. According to yet another aspect of the present invention, a travel restrictor pin (52) is provided extending between the pair of end wing portions (28, 30) and through an opening in the body portion (46) of the core element (14). The travel restrictor pin (52) provides additional longitudinal travel restriction in order to limit the amount of stresses applied to the elastomeric spring member (16).

WO 2005/015050 A3



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,*

IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

1 December 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.